

CLAIMS:

1. A dynamic color mixing device comprising:
 - (a) at least one light emitting diode (LED) unit each including:
 - (a1) a first LED of a first color; and
 - (a2) a second LED of a second color;
 - (b) a controller configured to supply respective driving signals to each of said first LED and second LED individually, said respective driving signals individually controlling relative intensity outputs of said respective first LED and second LED.
2. A dynamic color mixing device according to claim 1, wherein said at least one LED unit further includes (a3) a third LED of a third color, and said controller is further configured to supply a respective driving signal to individually control a relative intensity output of said third LED.
3. A dynamic color mixing device according to claim 2, further comprising:
 - (c) temperature regulators configured to maintain a desired temperature at each of said first LED, said second LED, and said third LED.
4. A dynamic color mixing device according to claim 3, wherein each temperature regulator comprises a thermoelectric device.
5. A dynamic color mixing device according to claim 2, wherein said controller individually frequency modulates the respective driving signals supplied to each of said first LED, second LED, and third LED to individually control their relative intensity outputs.
6. A dynamic color mixing device according to claim 5, wherein said controller further amplitude modulates the respective driving signals supplied to each of said first LED, second LED, and third LED.
7. A dynamic color mixing device according to claim 6, further comprising:
 - (c) a temperature sensor configured to sense a temperature at at least a portion of said at least one LED unit, and

wherein said controller further monitors the sensed temperature of said at least one LED unit and integrates a current supplied to said at least one LED unit, and controls the amplitude modulation based on the monitored temperature and integrated current.

8. A dynamic color mixing device according to claim 7, wherein said controller is further configured to control said temperature sensor based on the monitored temperature and integrated current.

9. A dynamic color mixing device according to claim 6, further comprising:
a color sensor array configured to sense colors of light output from at least a portion of said at least one LED unit; and
wherein said controller is further configured to control the amplitude modulation based on the sensed colors.

10. A dynamic color mixing device according to claim 2, wherein said first LED is a red LED, said second LED is a green LED, and said third LED is a blue LED.

11. A dynamic color mixing device comprising:
(a) at least one light emitting diode (LED) unit each including:
 (a1) a first LED of a first color; and
 (a2) a second LED of a second color;
(b) means for supplying respective driving signals to each of said first LED and second LED individually, said respective driving signals individually controlling relative intensity outputs of said respective first LED and second LED.

12. A dynamic color mixing device according to claim 11, wherein said at least one LED unit further includes (a3) a third LED of a third color, and said controller is further configured to supply a respective driving signal to individually control a relative intensity output of said third LED.

13. A dynamic color mixing device according to claim 12, further comprising:
(c) means for maintaining a desired temperature at each of said first LED, said second LED, and said third LED.

14. A dynamic color mixing device according to claim 13, wherein said means for maintaining comprises a thermoelectric device.

15. The dynamic color mixing device according to claim 12, wherein said means for supplying further individually frequency modulates the respective driving signals supplied to each of said first LED, second LED, and third LED to individually control their relative intensity outputs.

16. A dynamic color mixing device according to claim 15, wherein said means for supplying further amplitude modulates the respective driving signals supplied to each of said first LED, second LED, and third LED.

17. The dynamic color mixing device according to claim 16, further comprising:
(c) means for sensing a temperature at at least a portion of said at least one LED unit,
and

wherein said means for supplying further monitors the sensed temperature of said at least one of LED unit and integrates a current supplied to said at least one LED unit, and controls the amplitude modulation based on the monitored temperature and integrated current.

18. A dynamic color mixing device according to claim 17, wherein said means for supplying further controls said means for sensing based on the monitored temperature and integrated current.

19. A dynamic color mixing device according to claim 16, further comprising:
means for sensing colors of light output from at least a portion of said at least one LED unit; and

wherein said means for supplying further controls the amplitude modulation based on the sensed colors.

20. A dynamic color mixing device according to claim 12, wherein said first LED is a red LED, said second LED is a green LED, and said third LED is a blue LED.